CLAIMS

1. A nucleic acid hybridizing under stringent conditions to a nucleotide sequence described in SEQ ID NO: 1 or a complementary nucleotide sequence thereof.

2. The nucleic acid according to Claim 1, wherein the nucleic acid consists of a nucleotide sequence having at least 15 contiguous nucleotides in a nucleotide sequence described in SEQ ID NO: 1 or a complementary nucleotide sequence thereof.

3. The nucleic acid according to Claim 2, wherein the nucleic acid consists of a nucleotide sequence described in SEQ ID NO: 1 or a complementary nucleotide sequence thereof.

4. The nucleic acid according to any one of Claims 1 to 3, wherein the nucleic acid is a probe or a primer.

5. The nucleic acid according to any one of Claims 1 to 4, wherein the nucleic acid is a tumor marker.

6. A method of testing canceration of a biological sample, comprising:

(a) using a nucleic acid according to any one of Claims 1 to 5 to measure the transcription level of the nucleic acid in the biological sample; and

(b) diagnosing the biological sample as being cancerous when the transcription level of the nucleic acid in the biological sample significantly exceeds that in a normal biological sample as a control.

7. The method of testing canceration of a biological sample according to Claim 6, comprising:

(a) using a nucleic acid according to any one of Claims 1 to 5 as a labeled probe, which is in turn brought into contact with the biological sample under stringent hybridization conditions to measure the transcription level of the nucleic acid in the biological sample based on a signal from the label of the hybridized nucleic acid; and

(b) diagnosing the biological sample as being cancerous when the transcription level of the nucleic acid in the biological sample significantly exceeds that in a normal biological sample as a control.

8. The method of testing the canceration of a biological sample according to Claim 6, comprising:

(a) using a primer according to claim 4 that is labeled to subject a biological sample to nucleic acid amplification and measuring the amount of a resulting nucleic acid amplification product; and

(b) diagnosing the biological sample as being cancerous when the amount of the nucleic acid amplification product significantly exceeds that in a normal biological sample as a control.

9. A method of examining the effectiveness of treatment for cancer therapy by use of a nucleic acid according to any one of Claims 1 to 5, comprising:

using a nucleic acid according to any one of Claims 1 to 5 to measure the transcription level of the nucleic acid in a biological sample that has received treatment for cancer therapy and comparing its measurement value with that before the treatment or without the treatment, thereby

determining whether the treatment given to the biological sample is effective or not.

10. The method according to Claim 9, comprising: using the biological sample which has already been cancerous and determining that treatment for cancer therapy given to the biological sample is effective when the transcription level of the nucleic acid in the biological sample that has received the treatment is significantly below that before the treatment or without the treatment.

11. The method according to Claim 9 or 10, wherein the biological sample is an *in vivo* biological sample from a non-human model animal.

12. The method according to any one of Claims 6 to 11, wherein the biological sample is a sample derived from the large intestine or peripheral blood.

13. A β1,3-N-acetyl-D-glucosaminyltransferase protein having an activity of transferring N-acetyl-D-glucosamine from a donor substrate to an acceptor substrate through β1,3-linkage, wherein "β" represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring.

14. The glycosyltransferase protein according to Claim 13, wherein the glycosyltransferase protein has at least one of the following properties (a) to (c):

(a) acceptor substrate specificity:

the glycosyltransferase protein has a significant transferring activity for at least Bz-β-lactoside and/or Galβ1-4GlcNAc groups,

wherein "Bz" represents a benzyl group, "Gal" represents a galactose residue, "GlcNAc" represents an N-acetyl-D-glucosamine residue, and "β" represents an anomer assuming a cis configuration, of anomers of glycosidic linkage at position 1 of the sugar ring;

(b) reaction pH:

the glycosyltransferase protein has a high activity at or around neutral; or

(c) divalent ion requirement:

the activity is enhanced in the presence of at least Mn^{2+} or CO^{2+}.

15. The glycosyltransferase protein according to Claim 13 or 14, wherein the glycosyltransferase protein has a significant activity for an acceptor substrate having an N-linked oligosaccharide with four Galβ1-4GlcNAc groups.

16. The glycosyltransferase protein according to any one of Claims 13 to 15, wherein the glycosyltransferase protein has any one sequence of the following (A) to (C):

(A) any one amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17;

(B) an amino acid sequence comprising any one amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17 in which one or several amino acid(s) is(are) substituted, deleted, or inserted; or

(C) an amino acid sequence having at least 40% identity to any one amino acid sequence of SEQ ID NO: 2, SEQ ID NO: 16, or SEQ ID NO: 17.

17. A nucleic acid encoding a β1,3-N-acetyl-D-

glucosaminyltransferase protein according to any one of Claims 13 to 16.

18. The nucleic acid according to Claim 17, wherein the nucleic acid comprises a nucleotide sequence from nucleotide Nos. 97 to 1194 described in SEQ ID NO: 1 or a complementary nucleotide sequence thereof.

19. The nucleic acid according to Claim 18, characterized in that the nucleic acid is DNA.

20. A vector comprising a nucleic acid according to Claim 18 or 19.

21. A transformant comprising a vector according to Claim 20.

22. A method of producing a β1,3-N-acetyl-D-glucosaminyltransferase protein, comprising: growing a transformant according to Claim 21 and expressing the glycosyltransferase protein to collect the glycosyltransferase protein from the transformant.

23. An antibody recognizing a β1,3-N-acetyl-D-glucosaminyltransferase protein according to any one of Claims 13 to 16.